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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/309,264	05/11/1999	YUKIJI YODA	P7292-9003	7284

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EXAMINER

DEJESUS, LYDIA M

ART UNIT PAPER NUMBER

2859

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/309,264

Applicant(s)

YODA ET AL.

Examiner

Lydia M. De Jesús

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 3, 5 and 12 are objected to because of the following informalities:

There is insufficient antecedent basis for the limitation "said tool of said machining tool" recited in said claims. To correct this inconsistency, the examiner suggests adding the limitation --a tool of -- after the limitation "machined by at: line 4 of claim 3; line 6 of claim 5; and line 3 of claim 12.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-8 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osburn in view of Matsumiya and DE004126532 A1 (cited on Form PTO-892 attached to Paper No. 6).

Osburn discloses a machining tool having an auto pallet changer means [44] for moving a work between a waiting position [47B] and a machining position [32] at an inlet of said machining tool.

Osburn fails to disclose a coordinate-measuring device for bringing a probe thereof close to said work in said waiting position of said auto pallet changer, directly after said work is

machined by said machining tool and placed on said waiting position, to thereby measure the forms and dimensions of said work.

However, Matsumiya teaches bringing a probe of a coordinate measuring machine [201], shown in Figure 14, close to a work on the table [217] of a machining tool [215] to thereby measure the forms and dimensions of said work.

Matsumiya also teaches the use of a movable carriage [211] as the support member the coordinate measuring device, in a broad sense, said movable carriage is considered a refuge means and it is considered that the coordinate measuring machine is capable of taking refuge in a linear or rotational motion i.e., by moving the movable carriage away from the machining center, to such a position as that said coordinate measuring machine does not prevent said work from moving.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a coordinate measuring machine with a refuge means to the machining tool disclosed by Osburn for bringing a probe thereof close to the work on the waiting position [47B] of the pallet changer disclosed by EP1160053 A2, as suggested by Matsumiya, in order to measure the work directly at the machining site in real time to prevent the production of inferior goods (see Col. 14, lines 43-48).

Osburn also discloses that after the machining operation is completed for the work in the machining position [32] the pallet changer replaces the pallet in the machining position [32] with the pallet on the waiting position [47B] and the work which has been machined is replaced with the next work to be machined during the current machining operation (see lines 44-59 of column 8). Moreover, since the coordinate measuring machine of apparatus resulting from the

combination of Osburn and Matsumiya measures the dimensions of the work in the waiting position [47B] prior to the machined work being taken out of the machining site, in a broad sense, it is considered that the step of measuring will occur during the current machining operation or while simultaneously machining the other work. Therefore, it is considered that the steps recited in claim 1 are performed during the normal operation of the apparatus of the combination of Osburn and Matsumiya.

Matsumiya also shows that both the machining tool and probe of the coordinate measuring machine move toward said work in the same direction of motion. In the case of Matsumiya both the machining tool and the probe of the coordinate measuring device are vertically oriented. DE004126532 A1 shows that a coordinate measuring machine with a probe having a horizontal direction of motion i.e., mounted horizontally, are also very well known in the art.

Moreover, DE004126532 A1 also shows in the embodiment of Figure 10 that the Y displacement mechanism will cause the probe to retract in linear motion from the measuring area and hence, in a broad sense, this mechanism is considered a refuge means causing said coordinate measuring means to take refuge with linear motion to such a position as that said coordinate measuring machine does not prevent said work from moving.

Therefore, absent any criticality, at the time the invention was made one of ordinary skill in the art would consider a choice of design or engineering skill to modify the apparatus of the combination of Osburn, Matsumiya and DE004126532 A1 by selecting a coordinate measuring machine having a probe with the same direction of motion as the machining tool of Osburn i.e., horizontal, as taught by Matsumiya, said coordinate measuring means including a refuge means,

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as taught by DE004126532 A1, and to position the tool of the machining tool and the probe of the coordinate measuring machine orthogonal to each other such that the displacement commands provided to the machine tool and the displacement data provided by the coordinate measuring machine correspond to parallel frames of reference thereby simplifying the analysis and correlation of said data.

The resulting apparatus will hence perform, during its normal operation, the step of moving said probe of said coordinate measuring machine and said machining tool toward said work in the same direction of motion i.e., horizontally and orthogonal to each other.

With respect to claim 11: DE004126532 A1 also teaches that it is very well known in the art to provide a coordinate measuring machine with a rotating means [470] for rotating the work which is placed on a measuring position (as shown by arrows [PHI] on Figure 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a rotating means for rotating the work on the measuring position to the apparatus of the combination of Osburn and Matsumiya, as taught by DE004126532 A1, in order to allow measuring the form of the entire work.

With respect to claim 12: The apparatus resulting from the combination of Osburn, Matsumiya and DE004126532 A1 comprises a coordinate measuring machine, disposed in the vicinity of a machining tool, and capable of getting a probe thereof close to a work in a waiting position of an auto pallet changer, directly after said work is machined by said machining tool and placed in said waiting position, to thereby measure the forms and dimensions of said work, wherein said tool of said machining tool and said probe of said coordinate measuring machine move toward said work in a horizontal direction of motion and orthogonal to each other.

4. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osburn in view of Matsumiya and DE004126532 A1 as applied to claims 3-8 and 11-12 above, further in view of Yoshida.

Osburn, Matsumiya and DE004126532 A1 together disclose a work form measuring apparatus as claimed, as stated above in paragraph 3, but to disclose said machining tool and coordinate measuring means mutually exchanging a measurement enabling signal and a measurement completion signal, both of which are related to the movement of the work by said changer, and further fail to disclose that said coordinate measuring means leaving a refuge position after having received a change movement completion signal, from said machining tool, and said changer starts moving said work after having received a signal of informing a coordinate measuring means refuge completion.

Yoshida teaches that it is very well known in the art to provide a system controller for coordinating the operation of a machining center that also includes a measuring unit, the machining units and measuring unit of the machining center of Yoshida mutually exchange signals through the system controller in relation to the movement of pallets from one position to another and beginning or end of machining at a machining tool.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a system controller to the apparatus of the combination of Osburn, Matsumiya and DE004126532 A1, as taught by Yoshida, such that said machining tool and said coordinate measuring machine mutually exchange a measurement enabling signal and a measurement completion signal related to the movement of said work by said changer and such that said coordinate measuring means leaves a refuge position after having received a change

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movement completion signal, form said machining tool, and said changer starts moving said work after having received a signal of informing a coordinate measuring means refuge completion, in order to increase the accuracy of the apparatus by programming the machining and work-form measuring process and further to store the data of the process for further analysis.

***Response to Arguments***

5. Applicant's arguments filed August 14, 2003 have been fully considered but they are not persuasive.

During a telephone conversation with Ms. Anderson on November 3, 2003, the examiner pointed out that the remarks fail to set forth or to explain why the amended claims are not suggested or taught by the cited combination of references presented in the previous Office Action.

Although the remarks presented by Applicant state the advantage of the claimed arrangement of the tool and the probe orthogonal to each other as pointed out by Ms. Anderson during the conversation, i.e. effective utilization of space, the remarks fail to set forth the criticality of said arrangement and how this arrangement does not merely result from a choice of design. Ms. Anderson has requested that an Office action be presented in order to discuss the grounds of rejection with the Applicant and present further arguments.

It should further be noted that in view of Applicant's remarks and amendments to claim 12, now positively claiming a tool for the machining tool, claim 12 is considered to be directed to the combination of the coordinate measuring machine, the machining tool and the auto pallet changer.



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***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lydia M. De Jesús whose telephone number is (703) 306-5982.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutierrez can be reached on (703) 308-3875. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

LDJ  
November 3, 2003

  
Diego F.F. Gutierrez  
Supervisory Patent Examiner  
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